344 A cluster of the *cystic fibrosis transmembrane regulator* (*CFTR*) mutation S549R in the Sultanate of Oman

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The mutational pattern of CFTR mutations is largely unknown in Oman and most other Arab countries. We describe initial investigations for establishing an Omani mutational panel by analyzing 22 alleles of non-related CF patients in a randomly selected subset of our patient cohort in North Al Bathina, Sultanate of Oman. The major disease-causing mutation is S549R. S549R was detected in 77.3% of the investigated alleles. In five alleles, the mutations could not be identified. One patient is a compound heterozygote with the mutation S549R and another yet-unidentified mutation. The most common Caucasian CFTR mutation, delF508, was absent in the investigated cohort. S549R eliminates the restriction site of DraIII in exon 11. Thus, this specific property can be utilized for fast and efficient prescreening and mutation detection upon clinical suspicion of CF. The phenotype of our S549R homozygotes is severe and characterized by failure to thrive with frequent pulmonary exacerbations. Analysis of fecal elastase in S549R homozygotes revealed severe exocrine pancreatic insufficiency. The average sweat conductivity and chloride concentration were 116±3.6 mmol/l and 102±5.7 mmol/l, respectively. The currently poor outcome of our CF patients with a life expectancy of 10.5±1.8 years cannot be attributed to S549R alone. Due to socio-cultural and medical-educational factors, 90% of the patients are below the 50 BMI percentile of the WHO child growth chart.

345 Study of the prevalence of *CFTR* gene mutations in the Portuguese population

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Introduction: Cystic Fibrosis (CF) is defined as the most frequent monogenic autosomal recessive disease in the Caucasian population, being the major cause of death in children and young adults. In the European population, the frequency of CF carriers is 1 in 2500 births, with variations according to ethnic group and geographical location. However, in Portugal, the prevalence of CF is unknown. The aim of the present study is to evaluate the prevalence of CF by studying a group of individuals (912 samples) randomly selected and representative of the Portuguese population.
Methods: Initial screening was performed in 100 samples by complete DNA sequencing of exons 4, 7, 9, 10, 11, 12, 13, 14a, 15 and 17b of the *CFTR* gene.
Results: Mutation G576A was identified in 3 samples (3%), mutation R668C was identified in 2 samples (2%) and three other mutations, D443Y, F508del and L976S, were identified in 1 sample (1%). Regarding *CFTR* polymorphisms, c.1408A>G was detected in 85 samples (85%), c.2562T>G in 54 samples (54%), IVS8-5T and c.1584G>A in 8 samples (8%), c.3140-92T>C in 7 samples (7%), c.1523T>G in 3 samples (3%) and c.1052C>G, c.1614T>C, c.2898G>A, c.3154T>G and c.3285>T were detected in 1 sample (1%). c.1614T>C, in exon 11, was identified for the first time in this study.
Conclusions: In this preliminary analysis, 8 *CFTR* mutations were detected in 100 samples, corresponding to a 4% of carrier frequency in 200 studied alleles, and a novel polymorphism (c.1614T>C) was identified. The results obtained with the present study are expected to contribute to a better knowledge of the Portuguese *CFTR* gene mutations spectrum as well as to improve the CF diagnosis used in Portugal.

346 The prevalence of F508del and its relation to clinical manifestation in CF patients from Albania

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Patients with CF display a broad spectrum of clinical variation, influenced by mutation. F508del is the most common mutation in cystic fibrosis (CF). The aim of this study was to determine the prevalence of F508del and its relation to clinical manifestation in CF.
Method: This is a single CF unit retrospective study, analyzing the genetic and clinical characteristics of 90 genotyped children from Albania. All children were analyzed for 31 mutations. In all patients were recorded age at diagnosis, presenting symptoms, sweat-chloride concentration, and complication.
Results: We have analyzed 75% of all the patients in registry from 1992 till October 2011. The mutations found were: F508del, G542X, 621+1G>T, G85E, R1158X, E822X, N1303K. 74.4% of analyzed children were homozygous for F508del, 14.5% were heterozygous for F508del (6 cases with one unknown mutation, and 7 cases in combination with other mutations). 52% of children homozygous for F508del presented with edema, anemia and hypoproteinemia, as opposed to only 15% of children with other mutations, or combination of F508del/other mutations. Meconium ileus was present in 4.4% of patients homozygous for F508 mutations, as opposed to 14% of patients heterozygous for F508 mutations and no patients with only other mutations. Concerning the complications there was no significant difference for liver disease based only on ultrasound abnormality. In our patients only one have had cirrhosis and diabetes.
Conclusion: The presence of F508del homozygous is high in Albanian population, but cannot predict prognosis in CF patients at time of their diagnosis.

347 Demographic and clinical characteristics of cystic fibrosis patients in Slovenia

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Objectives: Demographic and clinical data from cystic fibrosis (CF) patients followed at the centralized pediatric CF center were published in the European Cystic Fibrosis Patient Registry Report 2007, but there is paucity of available data on the state's adult CF population. Study aim: to describe characteristics of all known patients in Slovenia in 2010 and compare them to earlier data of 2007.
Methods: Data from all patients followed at state's centralized pediatric CF center and two adult CF centers were collected, reviewed and compared to previously published report.
Results: A total of 88 patients were identified (female 58%), mean age 16.0 yrs, 36.4% were older than 18 yrs. 2007 report had information on 50 patients; only 4.0% were over 18 yrs. Median age at diagnosis was 4 months and 2 were diagnosed in adulthood. Forty-eight percent of patients were homozygous for ΔF508 mutation. The comparison in pulmonary function shows improvement especially in the group of adolescent patients (15–19 yrs) with a median FEV1 (% pred) of 92.0 (IQR 82.0–103.0). The nutritional status of patients in 2010 was better than in 2007 with most of the children and adolescents having BMI between 25th and 50th percentiles and adults having a mean BMI of 22.2 (SD ±2.5). In 2010 10% of patients had chronic *Pseudomonas aeruginosa* (PA) colonization, which is half as much as in 2007. In 2010 eight cases (9.1%) of lung transplantation were reported, performed at a mean age of 28.6 yrs.
Conclusions: The most recent data describing Slovenian CF population suggest improvement in nutritional status and pulmonary function, lower prevalence of chronic PA infection and include CF patients after lung transplantation.